

**Claims**

1. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising the steps of
  - i) contacting a test compound with a NAALADASE 2 polypeptide,
  - ii) detect binding of said test compound to said NAALADASE 2 polypeptide.
2. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising the steps of
  - i) determining the activity of a NAALADASE 2 polypeptide at a certain concentration of a test compound or in the absence of said test compound,
  - ii) determining the activity of said polypeptide at a different concentration of said test compound.
3. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising the steps of
  - i) determining the activity of a NAALADASE 2 polypeptide at a certain concentration of a test compound,
  - ii) determining the activity of a NAALADASE 2 polypeptide at the presence of a compound known to be a regulator of a NAALADASE 2 polypeptide.
4. The method of any of claims 1 to 3, wherein the step of contacting is in or at the surface of a cell.
5. The method of any of claims 1 to 3, wherein the cell is in vitro.

6. The method of any of claims 1 to 3, wherein the step of contacting is in a cell-free system.
7. The method of any of claims 1 to 3, wherein the polypeptide is coupled to a detectable label.
8. The method of any of claims 1 to 3, wherein the compound is coupled to a detectable label.
- 5 9. The method of any of claims 1 to 3, wherein the test compound displaces a ligand which is first bound to the polypeptide.
10. The method of any of claims 1 to 3, wherein the polypeptide is attached to a solid support.
11. The method of any of claims 1 to 3, wherein the compound is attached to a solid support.
- 10 12. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising the steps of
  - i) contacting a test compound with a NAALADASE 2 polynucleotide,
  - 15 ii) detect binding of said test compound to said NAALADASE 2 polynucleotide.
13. The method of claim 12 wherein the nucleic acid molecule is RNA.
14. The method of claim 12 wherein the contacting step is in or at the surface of a cell.
15. The method of claim 12 wherein the contacting step is in a cell-free system.
16. The method of claim 12 wherein polynucleotide is coupled to a detectable label.
- 20 17. The method of claim 12 wherein the test compound is coupled to a detectable label.
18. A method of diagnosing a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising the steps of
  - 25 i) determining the amount of a NAALADASE 2 polynucleotide in a sample taken from said mammal,

- ii) determining the amount of NAALADASE 2 polynucleotide in healthy and/or diseased mammals.
19. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising a therapeutic agent which binds to a NAALADASE 2 polypeptide.
20. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising a therapeutic agent which regulates the activity of a NAALADASE 2 polypeptide.
21. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising a therapeutic agent which regulates the activity of a NAALADASE 2 polypeptide, wherein said therapeutic agent is
- i) a small molecule,
  - ii) an RNA molecule,
  - iii) an antisense oligonucleotide,
  - iv) a polypeptide,
  - v) an antibody, or
  - vi) a ribozyme.
22. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising a NAALADASE 2 polynucleotide.

23. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising a NAALADASE 2 polypeptide.
24. Use of regulators of a NAALADASE 2 for the preparation of a pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal.
25. Method for the preparation of a pharmaceutical composition useful for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal comprising the steps of
- i) identifying a regulator of NAALADASE 2,
  - ii) determining whether said regulator ameliorates the symptoms of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders, in a mammal; and
  - iii) combining of said regulator with an acceptable pharmaceutical carrier.
26. Use of a regulator of NAALADASE 2 for the regulation of NAALADASE 2 activity in a mammal having a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, neurological diseases, urological diseases, respiratory diseases and reproduction disorders,.